Octopus-Inspired Camouflage and Signaling Systems

Tech ID: 33740 / UC Case 2020-682-0

BRIEF DESCRIPTION

A groundbreaking technology that mimics the dynamic color-changing functionality of the blue-ringed octopus for applications in camouflage, signaling, and beyond.

FULL DESCRIPTION

Researchers at UCI have developed adaptive platforms based on a nonacene derivative, showcasing exceptional stability and versatility. These platforms can modulate their appearance across visible and near-infrared spectrums, inspired by the natural camouflage capabilities of the blue-ringed octopus. The nonacene derivative used is notable for its easy synthesis, solubility, and processing into films, enabling large-area device fabrication that is both rapid and self-repairing. This innovation promises to overcome the limitations of current systems by offering dual-mode actuation, rapid response times, and multifunctional optical capabilities.

SUGGESTED USES

- Advanced camouflage and stealth technologies.
- High-resolution organic optoelectronic displays.
- Biomedical imaging and sensors.
- Energy harvesting systems and photovoltaics.
- Soft robotics and actuators with self-repairing capabilities.

ADVANTAGES

- Unprecedented stability and tunability across a broad wavelength range.
- Simple fabrication over large areas with self-repair capabilities.
- Rapid response times with minimal performance degradation over time.
- Compatibility with mechanical and electromechanical actuation strategies.
- Multifunctional, enabling simultaneous modulation of coloration, fluorescence, and transmittance

PATENT STATUS

Patent Pending

CONTACT

Richard Y. Tun
tunr@uci.edu
tel: 949-824-3586.

OTHER INFORMATION

CATEGORIZED AS

- **Optics and Photonics**
  - All Optics and Photonics
- **Materials & Chemicals**
  - Other
  - Textiles
- **Security and Defense**
  - Other
- **Sensors & Instrumentation**
  - Biosensors
  - Environmental Sensors

RELATED CASES

2020-682-0

UCI Beall
Applied Innovation

5270 California Avenue / Irvine,CA
92697-7700 / Tel: 949.824.2683